

By *Congruity*, I mean a property of a fluid Body, whereby any part of it is readily united with any other part, either of it self, or of any other similar, fluid, or solid body: And by *Incongruity* a property of a fluid, by which it is hindered from uniting with any dissimilar, fluid, or solid Body.

This last property, any one that hath been observingly conversant about fluid Bodies, cannot be ignorant of. For (not now to mention several Chymical Spirits and Oyls, which will very hardly, if at all, be brought to mix with one another; insomuch that there may be found some 8 or 9, or more, several distinct Liquors, which swimming one upon another, will not presently mix) we need seek no further for Examples of this kind in fluids, then to observe the drops of rain falling through the air, and the bubbles of air which are by any means conveyed under the surface of the water; or a drop of common *Sallet Oyl* swimming upon water. In all which, and many more examples of this kind that might be enumerated, the incongruity of two fluids is easily discernable. And as for the *Congruity* or *Incongruity* of Liquids, with several kinds of firm Bodies, they have long since been taken notice of, and called by the Names of *Driness* and *Moisture* (though these two names are not comprehensive enough, being commonly used to signify only the adhering or not adhering of water to some other solid Bodies) of this kind we may observe that water will more readily wet some woods than others; and that water, let fall upon a Feather, the whiter side of a *Colwort*, and some other leaves, or upon almost any dusty, unctuous, or resinous superficies, will not at all adhere to them, but easily tumble off from them, like a solid Bowl; whereas, if dropt upon *Linnen*, *Paper*, *Clay*, *green Wood*, &c. it will not be taken off, without leaving some part of it behind adhering to them. So *Quick-silver*, which will very hardly be brought to stick to any vegetable body, will readily adhere to, and mingle with, several clean metalline bodies.

And that we may the better finde what the cause of *Congruity* and *Incongruity* in bodies is, it will be requisite to consider, First, what is the cause of fluidness; And this, I conceive, to be nothing else but a certain pulse or shake of heat; for Heat being nothing else but a very brisk and vehement agitation of the parts of a body (as I have elsewhere made probable) the parts of a body are thereby made so loose from one another, that they easily move any way, and become fluid. That I may explain this a little by a gross Similitude, let us suppose a dish of sand set upon some body that is very much agitated, and shaken with some quick and strong vibrating motion, as on a *Milstone* turn'd round upon the under stone very violently whilst it is empty; or on a very stiff *Drum-head*, which is vehemently or very nimbly beaten with the *Drumsticks*. By this means, the sand in the dish, which before lay like a dull and unactive body, becomes a perfect fluid; and ye can no sooner make a hole in it with your finger, but it is immediately filled up again, and the upper surface of it levell'd. Nor can you bury a light body, as a piece of *Cork* under it, but it presently emerges or swims as 'twere on the top; nor can you lay a heavier on the top of it, as a piece of *Lead*, but it is immediately buried in

in Sand, and (as 'twere) sinks to the bottom. Nor can you make a hole in the side of the Dish, but the sand shall run out of it to a level, not an obvious property of a fluid body, as such, but this does imitate; and all this meerly caused by the vehement agitation of the containing vessel; for by this means, each sand becomes to have a vibrative or dancing motion, so as no other heavier body can rest on it, unless sustain'd by some other on either side: Nor will it suffer any Body to be beneath it, unless it be a heavier then it self. Another Instance of the strange loosening nature of a violent jarring Motion, or a strong and nimble vibrative one, we may have from a piece of iron grated on very strongly with a file: for if into that a pin be screw'd so firm and hard, that though it has a convenient head to it, yet it can by no means be unscrew'd by the fingers; if, I say, you attempt to unscrew this whilst grated on by the file, it will be found to undoe and turn very easily. The first of these Examples manifests, how a body actually divided into small parts, becomes a fluid. And the latter manifests by what means the agitation of heat so easily loosens and unties the parts of solid and firm bodies. Nor need we suppose heat to be any thing else, besides such a motion; for supposing we could Mechanically produce such a one quick and strong enough, we need not spend fuel to melt a body. Now, that I do not speak this altogether groundless, I must refer the Reader to the Observations I have made upon the shining sparks of Steel, for there he shall find that the same effects are produced upon small chips or parcels of Steel by the flame, and by a quick and violent motion; and if the body of steel may be thus melted (as I there shew it may) I think we have little reason to doubt that almost any other may not also. Every Smith can inform one how quickly both his File and the Iron grows hot with filing, and if you rub almost any two hard bodies together, they will do the same: And we know, that a sufficient degree of heat causes fluidity, in some bodies much sooner, and in others later; that is, the parts of the body of some are so loose from one another, and so unapt to cohere, and so minute and little, that a very small degree of agitation keeps them always in the state of fluidity. Of this kind, I suppose, the *Aether*, that is the medium or fluid body, in which all other bodies do as it were swim and move; and particularly, the *Air*, which seems nothing else but a kind of tincture or solution of terrestrial and aqueous particles dissolv'd into it, and agitated by it, just as the tincture of *Cocheneel* is nothing but some finer dissoluble parts of that Concrete lick'd up or dissolv'd by the fluid water. And from this Notion of it, we may easily give a more Intelligible reason how the Air becomes so capable of Rarefaction and Condensation. For, as in tinctures, one grain of some strongly tinging substance may sensibly colour some hundred thousand grains of appropriated Liquors, so as every drop of it has its proportionate share, and be sensibly ting'd, as I have try'd both with *Lagwood* and *Cocheneel*: And as some few grains of Salt is able to infect as great a quantity, as may be found by precipitations, though not so easily by the sight or taste; so the Air, which seems to be but as 'twere a tincture or saline substance, dissolv'd and agitated by the fluid and agil Aether, may dis-

perse